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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/056,465	01/28/2002	Yong-yil Kim	EOS-0003	4160

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EXAMINER

NGUYEN, HANH N

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 01/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/056,465

Applicant(s)

KIM, YONG-YIL

Examiner

Nguyen N Hanh

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because references H1 and H1' should be dimensioned to the bottom of the coil 18. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the feature "the linear motor assembly further comprising one or more additional dual stator assemblies, each comprising opposing third and fourth magnet arrays; third and fourth yokes adapted to receive the third and fourth magnet arrays; and a centrally positioned magnet array between the yokes" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: "The linear motor assembly further comprising one or more additional dual stator assemblies, each comprising opposing third and fourth magnet arrays; third and fourth yokes adapted to receive the third and fourth magnet arrays;

and a centrally positioned magnet array between the yokes” as in claim 18 was not clearly described in the specification. Under the lights of the specification, the Examiner interprets the limitations as “the linear motor assembly comprised dual yoke and magnet assembly” as described in page 11 of the specification.

3. Claims 13 and 14 are objected to because of the following informalities: “the linear motor assembly of claim 10” should be written as --- the linear motor assembly of claim 11--- so that “the slot” has antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-10, 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Takedomi et al.

Regarding claim 1, Takedomi et al. disclose a linear motor assembly, comprising: opposing first and second magnet arrays (side magnets 14 in Fig. 1); an elongated first yoke (13) adapted to receive the first magnet array; an elongated second yoke adapted to receive the second magnet array; and a central magnet array (center magnets 14) positioned between the elongated first and second yokes, the central magnet array being adapted to slidably receive first and second coils on both sides of the central magnet array without a gap therebetween (Fig. 1 and 2).

Regarding claim 2, Takedomi et al. also disclose a linear motor assembly further comprising an elongated central yoke (12) positioned between the elongated first and second yokes (13).

Regarding claim 3, Takedomi et al. also disclose a linear motor assembly wherein the central magnet array is positioned on a first face of the elongated central yoke.

Regarding claim 4, Takedomi et al. also disclose a linear motor assembly further comprising means for securing the central magnet array to the first face (inherent).

Regarding claim 5, Takedomi et al. also disclose a linear motor assembly further comprising a second central magnet array positioned on a second face of the elongated central yoke.

Regarding claim 6, Takedomi et al. also disclose a linear motor assembly further comprising means for securing the central magnet array to the second face (inherent).

Regarding claim 7, Takedomi et al. also disclose a linear motor assembly further comprising a base plate (11) coupled to the elongated first and second yokes; and means (recess) for securing the elongated central yoke to the base plate.

Regarding claim 8, Takedomi et al. also disclose a linear motor assembly wherein each of said first and second magnet arrays comprises magnet elements being aligned in a row and positioned in alternating magnetic pole orientations (Fig. 3).

Regarding claim 9, Takedomi et al. also disclose a linear motor assembly further comprising a mover (16) coupled to the first and second coils.

Regarding claim 10, Takedomi et al. also disclose a linear motor assembly further comprising a base plate (11) coupled to the elongated first and second yokes.

Regarding claim 18, Takedomi et al. also disclose a linear motor assembly further comprising one or more additional dual stator assemblies, each comprising opposing third and fourth magnet arrays; third and fourth yokes adapted to receive the third and fourth magnet arrays; and a centrally positioned magnet array between the yokes (Fig. 1-3).

Regarding claim 19, Takedomi et al. also disclose a linear motor assembly wherein said magnet arrays includes at least eight magnets (4 magnets for each stator as can be seen clearly in Fig. 1 and 3) and wherein said magnetic flux path traverses through eight magnets in said single loop (inherent).

Regarding claim 20, Takedomi et al. also disclose a linear motor comprising: first and second coil assemblies (18 in Fig. 1), each coil assembly formed from a plurality of coils (19a, 19b, 19c); opposing first and second magnet arrays (side magnets 14); an elongated first yoke (13) adapted to receive the first magnet array; an elongated second yoke (13) adapted to receive the second magnet array; and a central magnet array positioned between the elongated first and second yokes (central magnet 14), the central magnet array being adapted to slidably receive the first and second coils on both sides of the central magnet array without a gap therebetween (as can be seen clearly in Fig. 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takedomi et al. in view of Kim et al. (KR 183244).

Regarding claim 11, Takedomi et al. show all limitations of the claimed invention except showing the linear motor assembly further comprising a first support arm coupled to the base plate, the support having a slot to slidably receive the elongated first yoke.

However, Kim et al. discloses the linear motor assembly further comprising a support arm coupled to the base plate, the support having a slot to slidably receive the elongated first yoke for the purpose of supporting the magnet.

Since Takedomi et al. and Kim et al. are in the same field of endeavor, the purpose disclosed by Kim would have been recognized in the pertinent art of Takedomi et al.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Takedomi et al. by forming a first support arm coupled to the base plate, the support having a slot to slidably receive the elongated first yoke as taught by Kim et al. for the purpose of supporting the magnet.

Regarding claim 12, It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Takedomi et al. by forming

a second support arm coupled to the base plate, the support having a slot to slidably receive the elongated first yoke as taught by Kim et al. for the purpose of supporting the magnet.

Regarding claim 13, Kim et al. also show the linear motor assembly wherein the slot and the elongated first yoke have interlocking trapezoidal shapes.

6. Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takedomi et al. in view of Kim et al. (KR 183244) and further in view of Koyano et al.

Regarding claim 14, Takedomi et al. and Kim et al. show all limitations of the claimed invention except showing the linear motor the linear motor assembly wherein the slot is open-ended.

However, Koyano et al. discloses the linear motor assembly the linear motor assembly wherein the slot is open-ended (Fig. 4) for the purpose of supporting the magnet.

Since Takedomi et al. and Kim et al. and Koyano et al. are in the same field of endeavor, the purpose disclosed by Koyano et al. would have been recognized in the pertinent art of Takedomi et al. and Kim et al.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Takedomi et al. and Kim et al. by forming the support having slot is open-ended at one side as taught by Koyano et al. for the purpose of supporting the magnet.

Regarding claim 15, Koyano et al. also show a plate to close the open-ended slot at the other side and to secure the first yoke to the first support arm.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Takedomi et al. and Kim et al. by using a plate to close the open-ended slot and to secure the first yoke to the first support arm as taught by Koyano et al. for the purpose of supporting the magnet.

7. Claims 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takedomi et al. in view of Kim et al. (KR 183244) and Koyano et al. and further in view of Beakley et al.

Regarding claims 16 and 17, the structure disclosed by Takedomi et al., modified by Kim et al. and Koyano et al. shows all limitations of the claimed invention except showing the linear motor assembly further comprising means for securing the plate to the slot and the securing means secures the plate horizontally or vertically.

However, Beakeley et al. disclose the linear motor assembly wherein retaining plate (20 in Fig. 1) to hold the magnet are secured to the yoke by the securing means (bolt) for the purpose of supporting the magnet.

Since Takedomi et al., Kim et al., Koyano et al. and Beakley et al. are in the same field of endeavor, the purpose disclosed by Beakley et al. would have been recognized in the pertinent art of Takedomi et al., Kim et al. and Koyano et al.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Takedomi et al., Kim et al. and Koyano et al. by using securing means (bolt) to secure the plate to the slots horizontally or vertically as taught by Beakley et al. for the purpose of supporting the magnet.

Conclusion

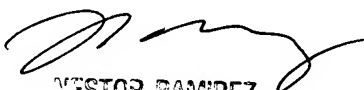
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh N Nguyen whose telephone number is (703) 305-3466. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

HNN

January 14, 2003


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